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INFORMATION DISCLOSURE STATEMENT APPLICANT

Sheet 1 of 4

Application Number.:

Filing Date:

December 11, 2

First Named Inventor:

Toshiharu Furukawa

Art Unit:

Unassigned 2826

Examiner Name:

Jnassigned Pert

Attorney Docket Number.:

ROC920030269US1

U.S. PATENT DOCUMENTS

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Examiner Initials*	Cite No.1	Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns or Lines Where Relevant Passages or Figs. Appear
D		US - 6.423.583 B1	07-23-2002	Avouris et al.	
P		US - 6.515.325 B1	02-04-2003	Farnworth et al.	<u> </u>
8		US - 2003/0168683 A1	09-11-2003	Farnworth et al.	1
89	<u>                                     </u>	US - 2003/0170930 A1	09-11-2003	Choi et al.	
ZP		US - 2003/0178617 A1	09-25-2003	Appenzeller et al.	
		US -			•
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#### **FOREIGN PATENT DOCUMENTS**

Examiner Initials	Cite No.1	Foreign Patent Document  Country <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns or Lines Where Relevant Passages or Figs. Appear	Т°
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<sup>&</sup>lt;sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>3</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language translation is attached.

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Sheet 2 of 4

Application Number.:

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Examiner Name: Attorney Docket Number.:

#### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and or country where published.	T²
S		P. HARRIS, "Carbon Nanotubes and Related Structures," Cambridge University Press, 1999.	
٤p		K. TEO et al., "Catalytic Synthesis of Carbon Nanotubes and Nanofibers," Encyclopedia of Nanoscience and Nanotechnology, Volume X, pp. 1-22, 2003.	
25		Y. ZHAO et al., "Film Growth of Pillars of Multi-Walled Carbon Nanotubes," J. Phys.: Condens., Matter 15 (2003), L565-L569.	
٤٥		Y. ZHANG et al., "Electric-Field-Directed Growth of Aligned Single-Walled Carbon Nanotubes," Applied Physics Letters, Volume 79, Number 19, November 5, 2001.	
28		"Synthesis of CNT's," http://nepp.nasa.gov/index_nasa.cfm/769/#synthesis.	
20		C-H KIANG, "Growth of Large-Diameter Single-Walled Carbon Nanotubes," . J. Phys. Chem. A 2000, 104, 2454-2456.	
Ep		E. PLOENJES et al., "Single-Walled Nanotube Synthesis in CO Laser Pumped Carbon Monoxice Plasmas," Ohio State University, October 10, 2001.	
٤٩	1	E. PLOENJES et al., "Synthesis of Single-Walled Carbon Nanotubes in Vibrationally Non-Equilibrium Carbon Monoxide," Chemical Physics Letters 352 (2002), February 6, 2002, pp. 342-347.	
T	¥	Y. MO et al., "The Growth Mechanism of Carbon Nanotubes from Thermal Cracking of Acetylene Over Nickel Catalyst Supported on Alumina," Elsevier Science B.V., 2001.	
20		M. JUNG et al., "Growth of Carbon Nanotubes by Chemical Vapor Deposition," Elsevier Science B.V., 2001.	
21		H. W. ZHU et al., "Direct Synthesis of Long Single-Walled Carbon Nanotube Strands," Science, Vol. 296, May 3, 2002.	
દ્રા		H. CUI et al., "Growth Behavior of Carbon Nanotubes on Multilayered Metal Catalyst Film in Chemical Vapor Deposition," Chemical Physics Letters 374 (2003), pp. 222-228.	
21	-{	J. LI et al., "Highly-Ordered Carbon Nanotube Arrays for Electronics Applications," Applied Physics Letters, Volume 75, Number 3, July 19, 1999, pp. 367-369.	
28		P. COLLINS et al., "Engineering Carbon Nanotubes and Nanotube Circuits Using Electrical Breakdown," Science, Vol. 292, April 27, 2001, pp. 706-709.	

Examiner Signature	5. 0+	Date Considered	9/11/05
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Sheet 3 of 4

**INFORMATION** 

STATEMENT BY APPLICAT

Application Number.:

Filing Date:

First Named Inventor:

Art Unit:

**Examiner Name:** Attorney Docket Number.: 10/732,951

December 11, 2003

Toshiharu Furukawa

Unassigned-Unassigned

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

	<del> </del>	HER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and or country where published.	T²
SP		V. DERYCKE et al., "Carbon Nanotube Inter- and Intramolecular Logic Gates," Nano Letters, xxxx, Vol. 0, No. 0, A-D, received August 16, 2001.	
٤٩		P. COLLINS et al., "Nanotubes for Electronics," Scientific American, December 2000, pp. 62-69.	
28		S. J. WIND et al., "Vertical Scaling of Carbon Nanotube Field-Effect Transistors Using Top Gate Electrodes," Applied Physics Letters, Volume 80, Number 20, May 20, 2002, pp. 3817-3819.	
EP		Z. F. REN et al., "Growth, Characterization, and Potential Applications of Periodic Carbon Nanotube Arrays," Department of Physics, Boston College, updated 2001.	
25		J. LI et al., "Bottom-Up Approach for Carbon Nanotube Interconnects," NASA Ames Research Center, received December 5, 2002, accepted January 31, 2003.	
5p		A. CAO et al., "Grapevine-Like Growth of Single Walled Carbon Nanotubes Among Vertically Aligned Multiwalled Nanotube Arrays," Applied Physics Letters, Volume 79, Number 9, August 27, 2001, pp. 1252-1254.	
59		"Carbon Nanotube Arrays: Synthesis of Dense Arrays of Well-Aligned Carbon Nanotubes Completely Filled with Titanium Carbide on Titanium Substrates," Battelle No. 12132.	
۶p		A. CHANG, "Integration of Nanotubes into Devices," National Nanofabrication Users Network, Stanford Nanofabrication Facility, p. 58.	
28		Z. HUANG et al., "Growth of Highly Oriented Carbon Nanotubes by Plasma-Enhanced Hot Filament Chemical Vapor Deposition," Applied Physics Letters, Volume 73, Number 26, December 28, 1998, pp. 3845-3847.	•
8		Z. REN et al., "Synthesis of Large Arrays of Well-Aligned Carbon Nanotubes on Glass," Science, Vol. 282, November 6, 1998, pp. 1105-1107.	
20		Z. REN et al., "Large Arrays of Well-Aligned Carbon Nanotubes," Proceedings of 13th International Winter School on Electronic Properties of Novel Materials, pp. 263-267, February 27-March 6, 1999, Kirchberg / Tirol, Austria.	
28		WON BONG CHOI et al., "Ultrahigh-Density Nanotransistors by Using Selectively Grown Vertical Carbon Nanotubes," Applied Physics Letters, Volume 79, Number 22, November 26, 2001, pp. 3696-3698.	

Examiner Signature	Evenler	Date Considered	9-15-05

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## STATEMENT BY APPLICANT

Sheet 4 of 4

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Art Unit:

**Examiner Name:** 

Attorney Docket Number.:

December 11, 2003

Toshiharu Furukawa

Unassigned Unassigned

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50		B. ZHENG et al., "Efficient CVD Growth of Single-Walled Carbon Nanotubes on Surfaces Using Carbon Monoxide Precursor," Nano Letters, xxxx, Vol. 0., No. 0, A-D, xxxx American Chemical Society, received June 4, 2002, revised June 26, 2002.	
દ્ર્		J. GORMAN, "Nanoscale Networks: Superlong Nanotubes Can Form a Grid," Science News Online, May 3, 2003, Vol. 163, No. 18.	
41		"Tiny Nanotubes Set New Record," Nanotechweb.org, August 7, 2003.	
53		"IBM Scientists Develop Carbon Nanotube Transistor Technology," IBM.com News, news report concerning work published in Science, Vol. 292, Issue 5517, April 27, 2001 entitled "Engineering Carbon Nanotubes and Nanotube Circuits Using Electrical Breakdown" by Phaeton Avouris et al.	

Examiner Signature Great Date Considered	116-05
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